USER EXPERIENCE DESIGN
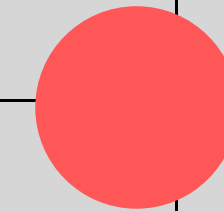
HUMAN ERRROR? NO BAD DESIGN; SLIPS & MISTAKES

1. HUMAN ERROR
2. PROJECT RESEARCH
3. OPPORTUNITY IDENTIFICATION
4. IN CLASS EXERCISE
5. QUESTIONS?

MIS3506 SPRING 2023

Evaluating Usability

Level 1

- **Knowledge in the head vs. in the world**
- **Gulf of execution and evaluation**
- **Conflict among the designer's and user's conceptual and system image**

Level 2

- **Processing:**
  Reflective –thinking,
  Behavioral –actions,
  Visceral-'lizard brain'

Level 3

- **Blame: The wrong thing, learned helplessness, oneself**
- **Slips and mistakes**

Designing the UX

Level 1

- **Conceptual model and system image**
- **Affordance**

Level 2

- **Mapping**
- **Discoverable**
- **Feedback**

Level 3

- **Signifier**
- **Constraints**
- **Convention**

I AM ONLY HUMAN (after all..)

What we mean by being "human"

- **what is human error?**
  - blame yourself
  - blame the wrong thing
  - look for cause and effect
  - learned helplessness
  - positive psychology

WHEN AN ACCIDENT IS THOUGHT TO BE CAUSED BY PEOPLE, WE BLAME THEM AND CONTINUE TO DO THINGS JUST AS WE'VE ALWAYS DONE.

NORMAN, P. 162

DEFINE THE PROBLEM - UNDERSTAND WHY THERE IS ERROR

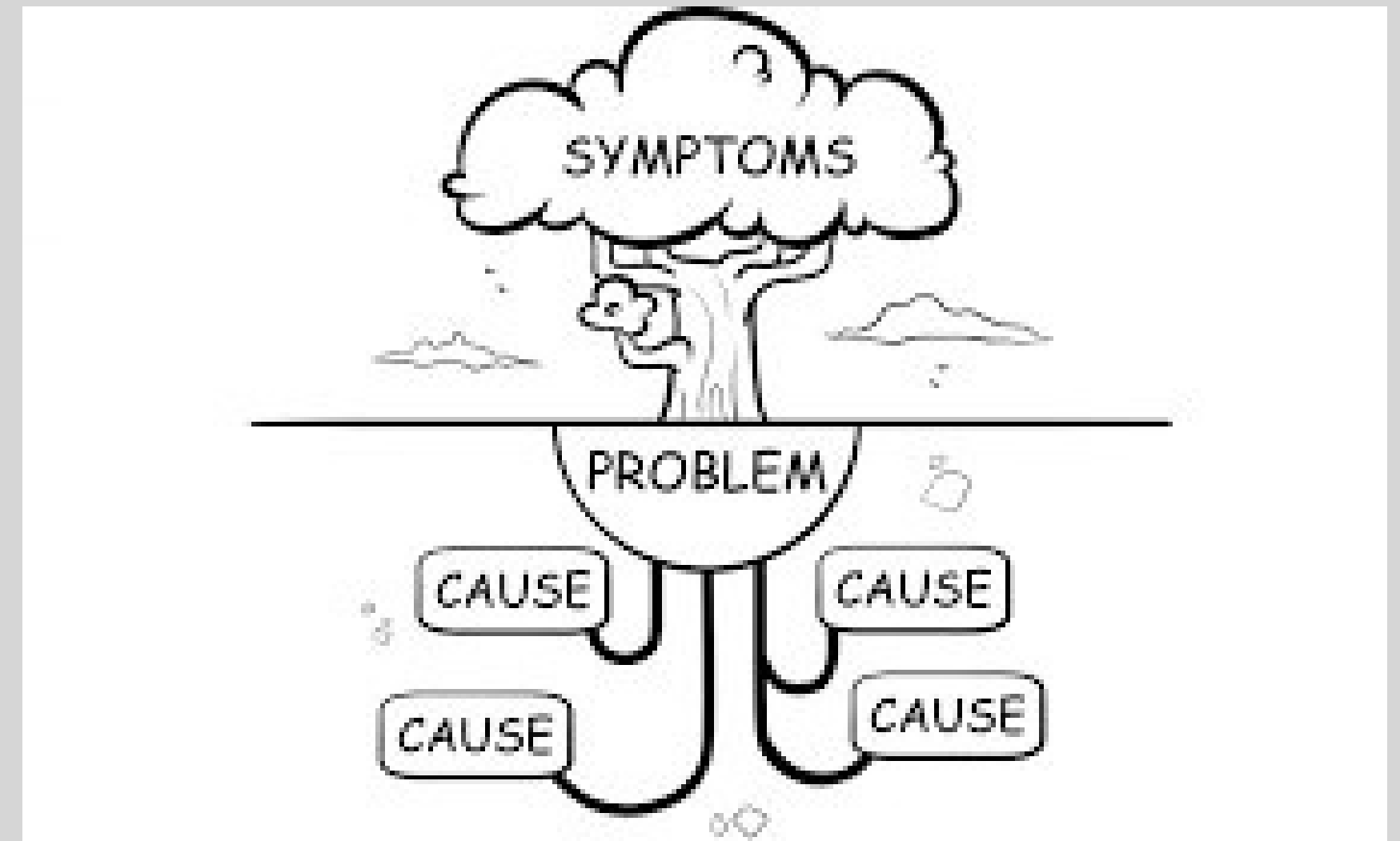# DIAGNOSING THE PROBLEM - WHAT IS THE ROLE OF EACH OF THESE IN UNDERSTANDING A PROCESS SO THAT IT CAN BE IMPROVED?
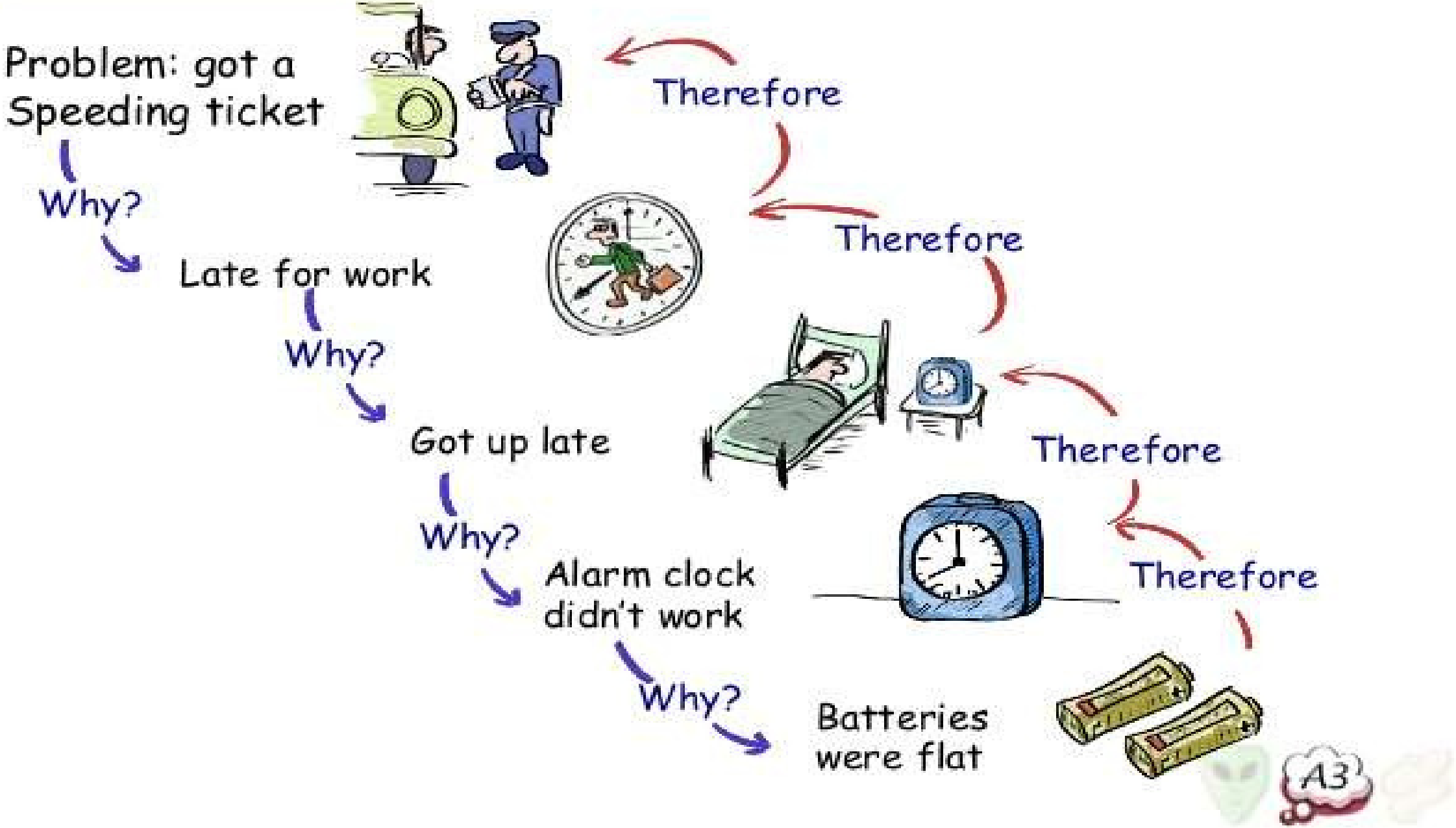

- FIVE WHYS
- ROOT CAUSE ANALYSIS

ROOT CAUSE ANALYSIS

MORE THAN PUTTING OUT FIRES
•IDENTIFY THE PROBLEM
•DEFINE THE PROBLEM
•COLLECT DATA
•IDENTIFY POSSIBLE CAUSAL FACTORS •IDENTIFY THE ROOT CAUSE •RECOMMEND & IMPLEMENT SOLUTIONS/CHANGES
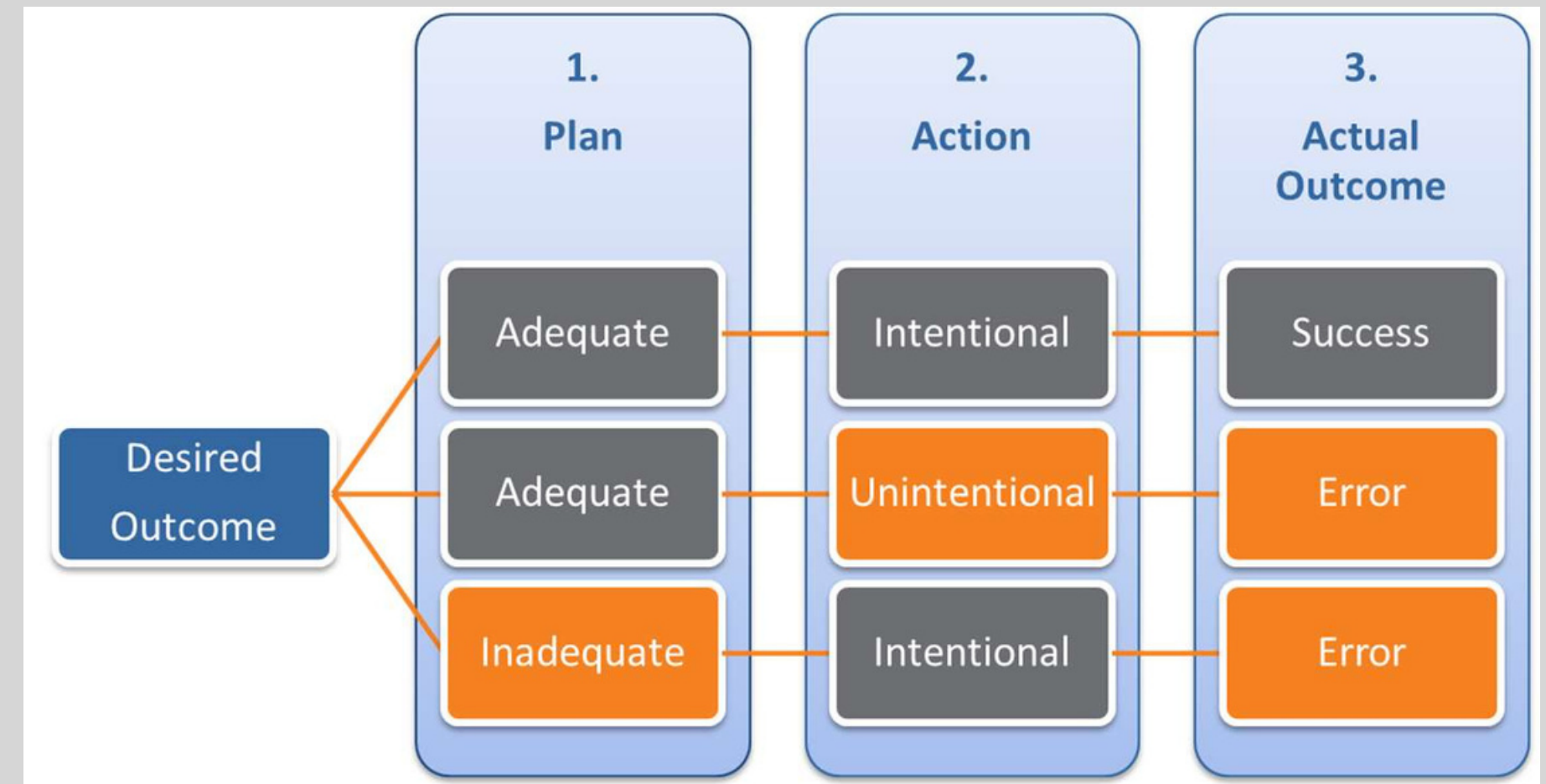
FIVE WHYS

DIAGNOSING ERROR

- IF THE SYSTEM ALLOWS YOU TO MAKE AN ERROR IT IS POORLY DESIGNED...

DIAGNOSING "HUMAN" ERROR

- ## FAILURES CAN OCCUR IN PLANNING AND EXECUTION

DO USERS SUCK?

MISTAKES VS. SLIPS VS
CHOICE & USABILITY

Slip

- Intent does not match action

Mistake

- Wrong Goals or Plan

Slip

- Action Based
- Memory Lapse

Slips –Everyday Errors

- Intending to do one thing and doing another
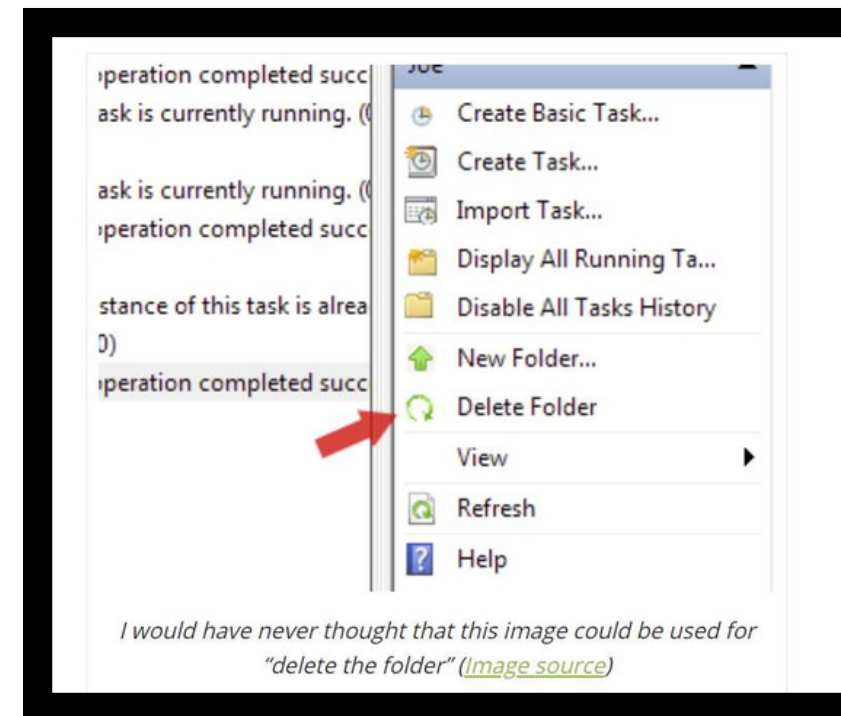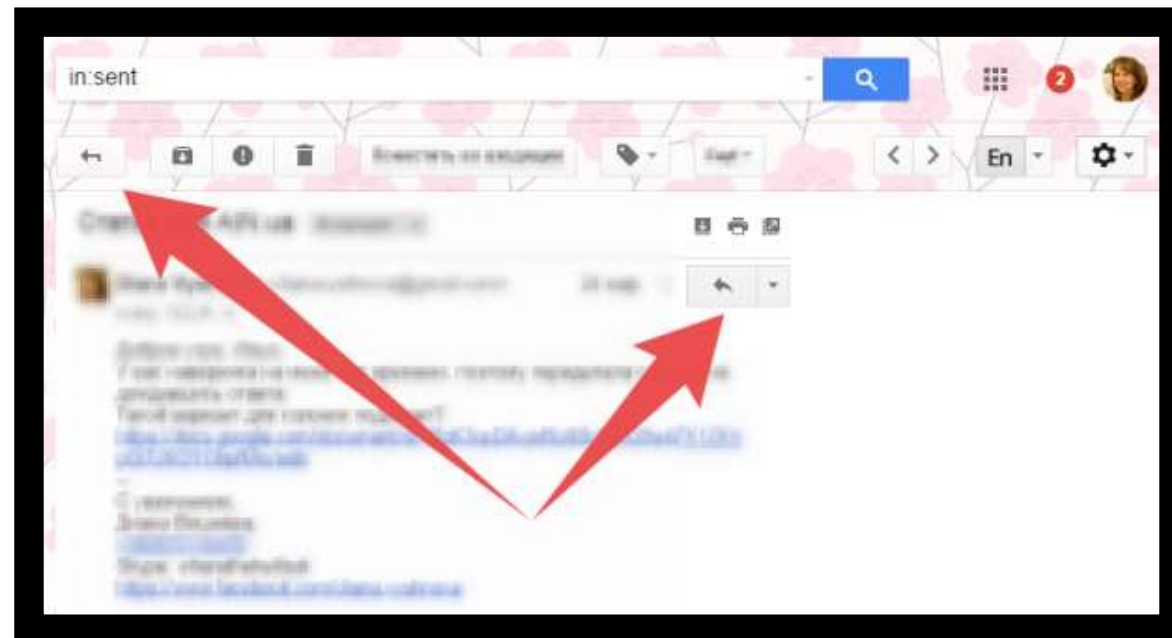
- Occur more frequently to skilled people?

Slips –Capture Slips

- Perform a frequent activity
- Partial memory-lapse

Slips – Description-Similarity

- Wrong & Right Items Look Similar

I would have never thought that this image could be used for "delete the folder" (Image source)

Slips –Memory-Lapse

- Failure to perform all steps
- Interruption of steps
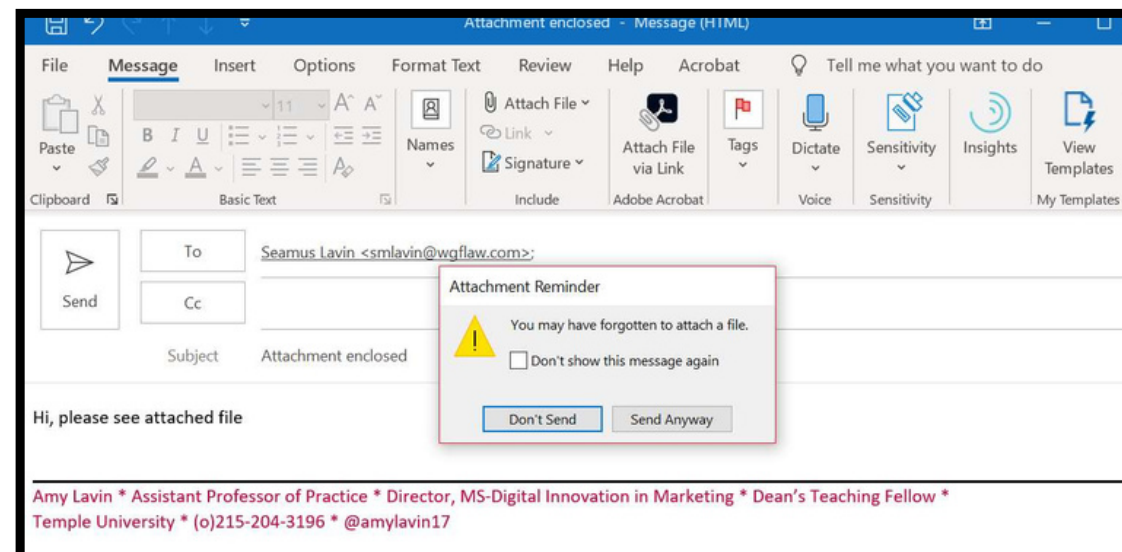
Slips –Mode Error

- Different states –different meanings

Mistake

- Rule Based
- Knowledge Based
- Memory Lapse

Mistakes -Rule Based

- Experience
- Formal Procedures

Mistakes –Knowledge Based

- New situation –can't relate a similar experience ,

Mistakes –Memory Lapse

- Memory failure leads to forgetting the goal or plan of action

Memory Lapse

•**Mistakes**areerrors inchoosing an objective or specifying a methodofachieving it whereas**slips**areerrors incarrying out an intended method for reaching an objective

Slip

Get waylaid enroute

Mistake

The goal or plan of action is wrong
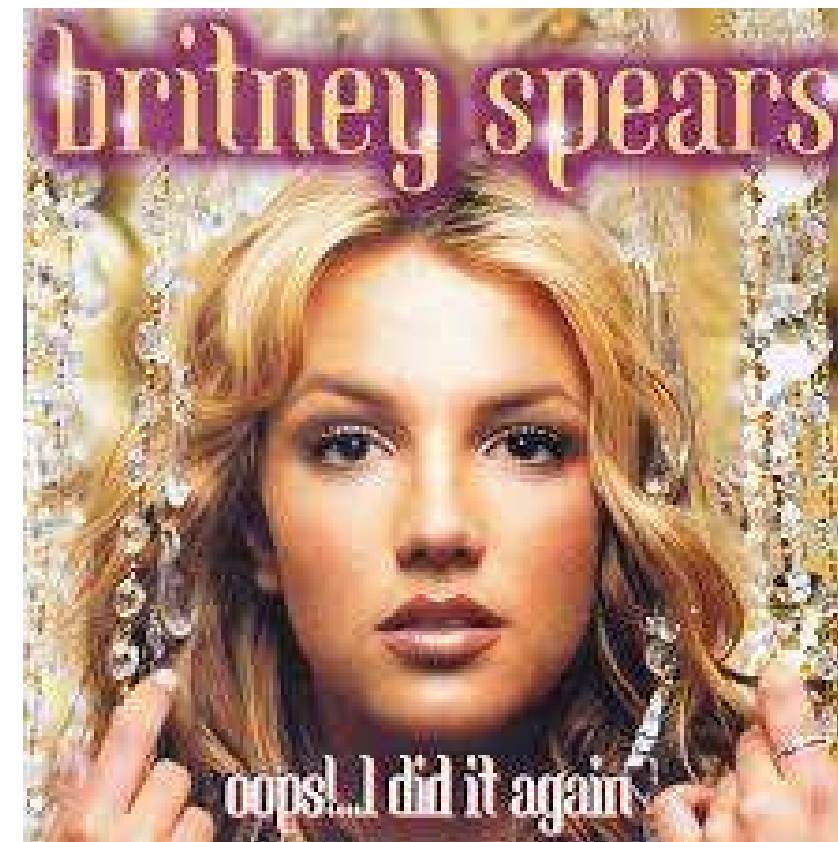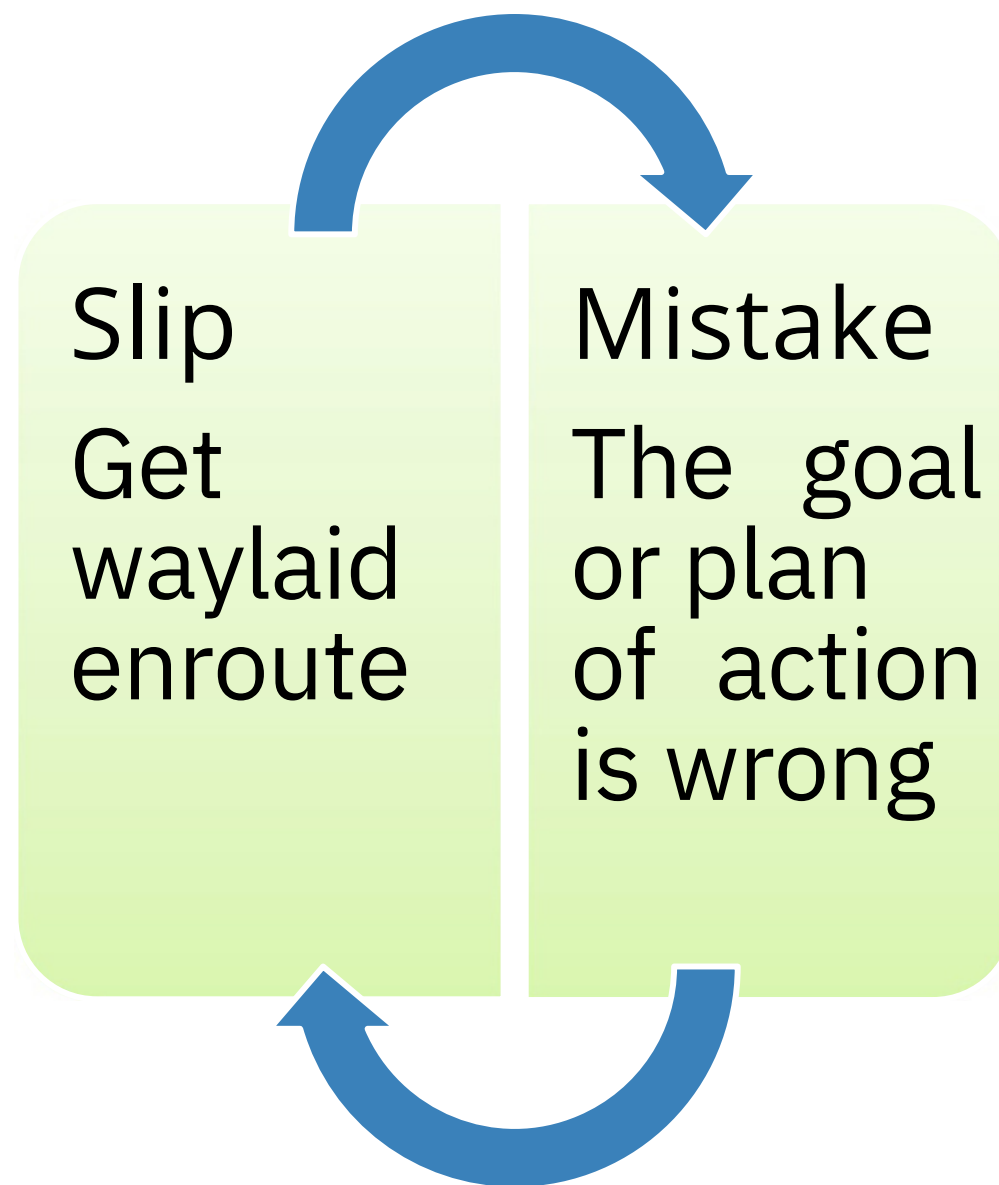
How can the designer combat these?
- Understand the design and the user
- Usability testing
- Discoverability of errors
- Availability of help
- Checklists
- Provide assistance to users through visual clues, feedback

Human error - slips and mistakes

slip

- 🙂 understand system and goal
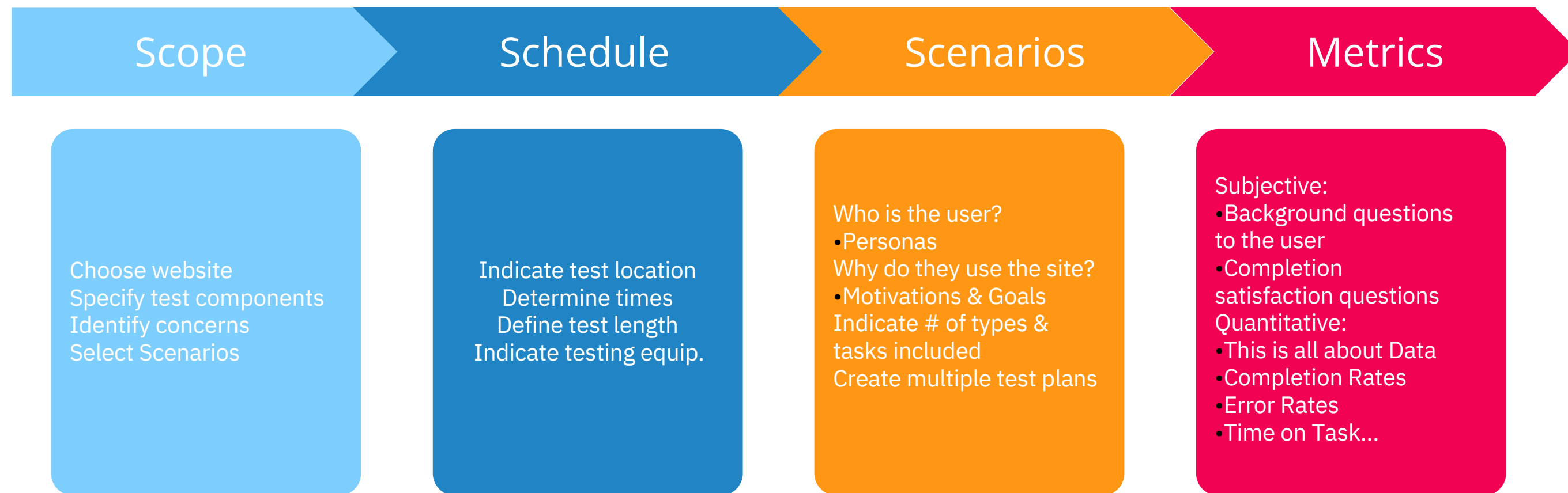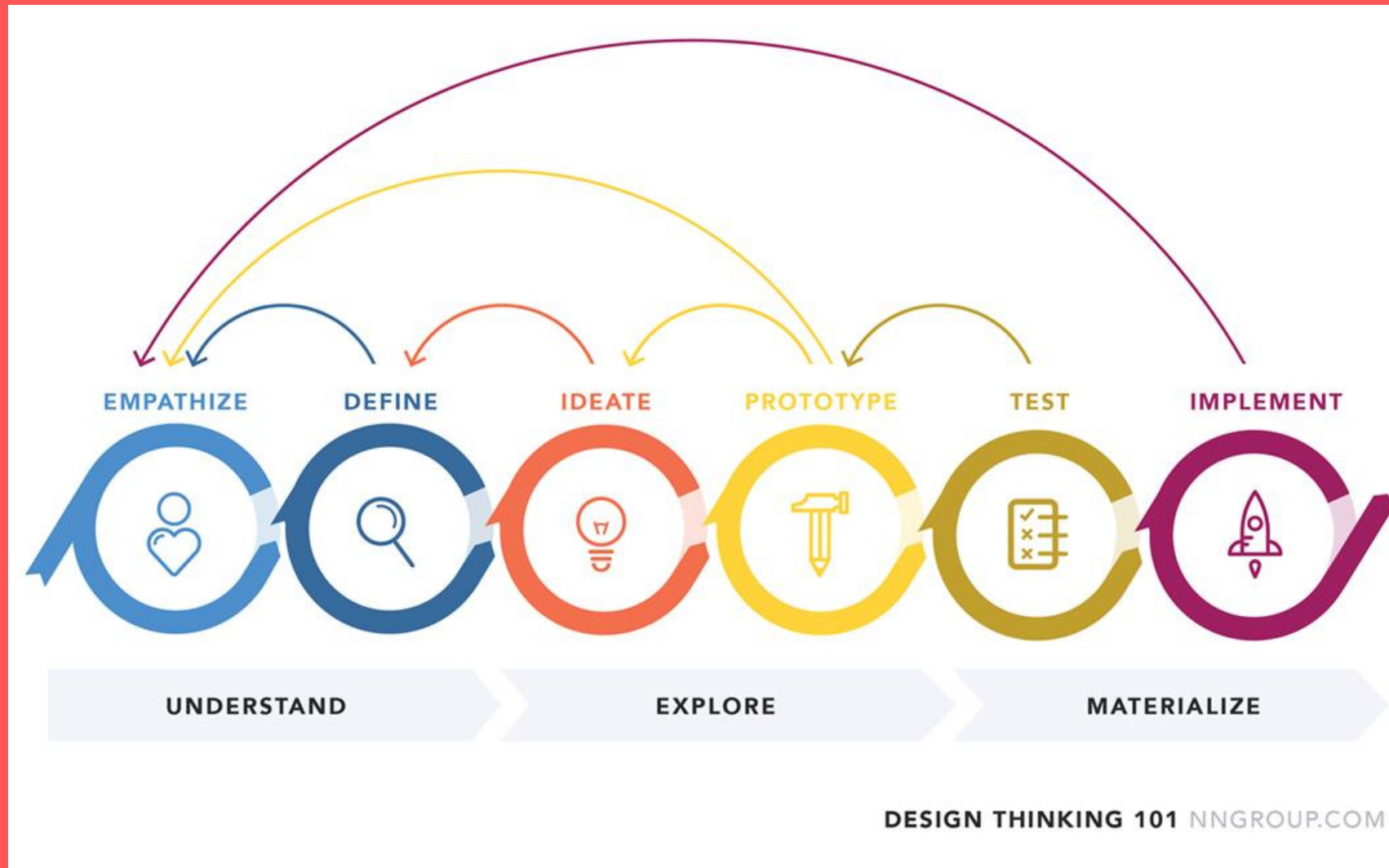- 🙂 correct formulation of action
- 🙁 incorrect action

mistake

- 🙁 may not even have right goal!

Fixing things?
- slip – better interface design
- mistake – better understanding of system

Planning Your Test

Scope	Schedule	Scenarios	Metrics

Scope
Choose website
Specify test components
Identify concerns
Select Scenarios

Schedule
Indicate test location
Determine times
Define test length
Indicate testing equip.

Scenarios
Who is the user?
•Personas
Why do they use the site?
•Motivations & Goals
Indicate # of types & tasks included
Create multiple test plans

Metrics
Subjective:
•Background questions to the user
•Completion satisfaction questions
Quantitative:
•This is all about Data
•Completion Rates
•Error Rates
•Time on Task...

DESIGN PROCESS: PROBLEM OR OPPORTUNITY

8

Usability Testing

Test early — •Hand drawn storyboard
•PowerPoint simulation

Test often — •And obviously the first and … last prototype

Grab anybody and everybody — •Friends, co-workers, diversity is good though!

Observe closely and ask them to verbalize — •Dump the ones that don't want to play

Ignore the lure of rigor — •getting a job in IBM is no longer lifelong

Hone in on key tasks — •"Find ABC", "purchase XYZ"

Document — •Keep notes on what you learned each time

Use Krug's script — •Once or twice
•Or if you want to get paid or if there is conflict

Usability testing

Typically one 'expert' user
- Cognitive walkthrough
- Heuristic evaluation

Multiple 'normal' users
- Observational test in a lab
- Hallway/café test
- A/B test

Test Goals

- Identify if users are able to complete specific tasks successfully

  - Determine how long it takes to complete tasks

- Establish how efficiently users can undertake predetermined tasks

- Identify changes required to improve user performance and satisfaction

- Running a usability test helps you to make subjective findings too:

  - Do users enjoy using the product?

  - Does the product work effectively?

Café testing tips

Identify the tasks you want the user to try in advance

Get talkative opinionated users

Use a script

Look at their hands and listen closely

Take notes or record –pros and cons

Reflect

- Visibility of System Status
- Match Between the System & Real World
- User Control and Freedom
- Consistency and standards
- Error prevention
- Recognition rather than recall
- Flexibility and Efficiency of Use
- Aesthetic and minimalist design
- Help users recognize, diagnose and recover from errors
- Help and Documentation

HEURISTIC REVIEW – UX - NIELSEN

Visibility of System Status

Match Between the System & Real World

User Control and Freedom

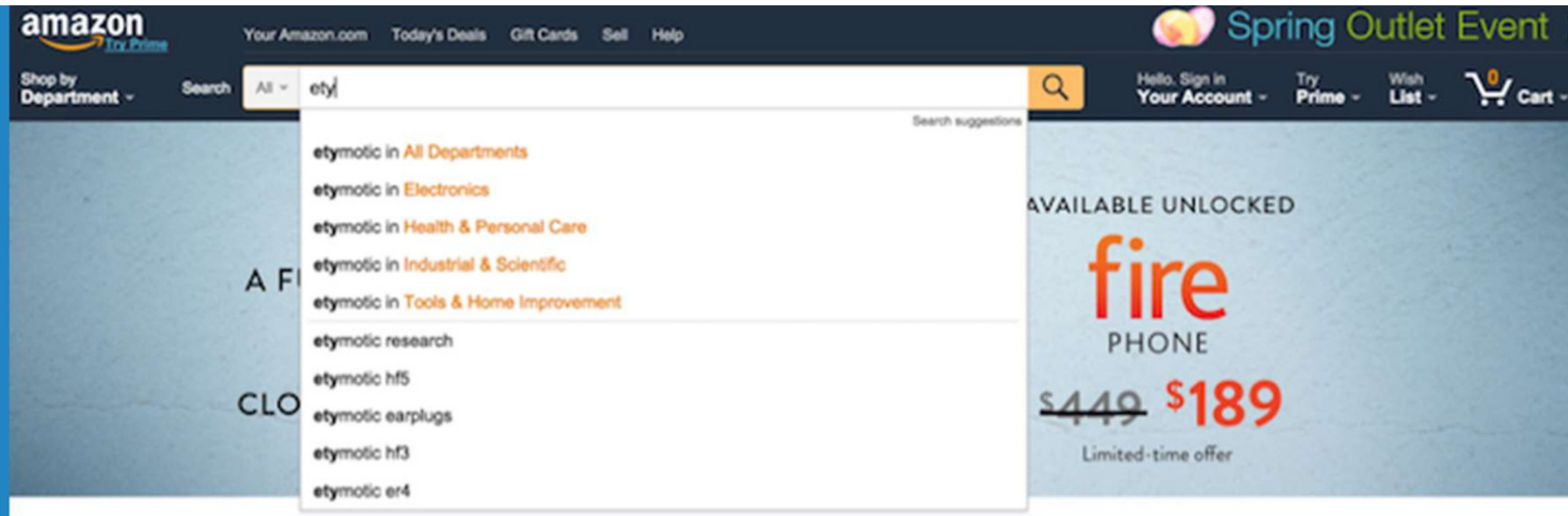Consistency and standards

Error prevention

Recognition rather than recall

Flexibility and Efficiency of Use

Aesthetic and minimalist design

Help users recognize, diagnose and recover from errors

Help and Documentation

Usability

In-class Activity –Usability Dry Run

Class activity

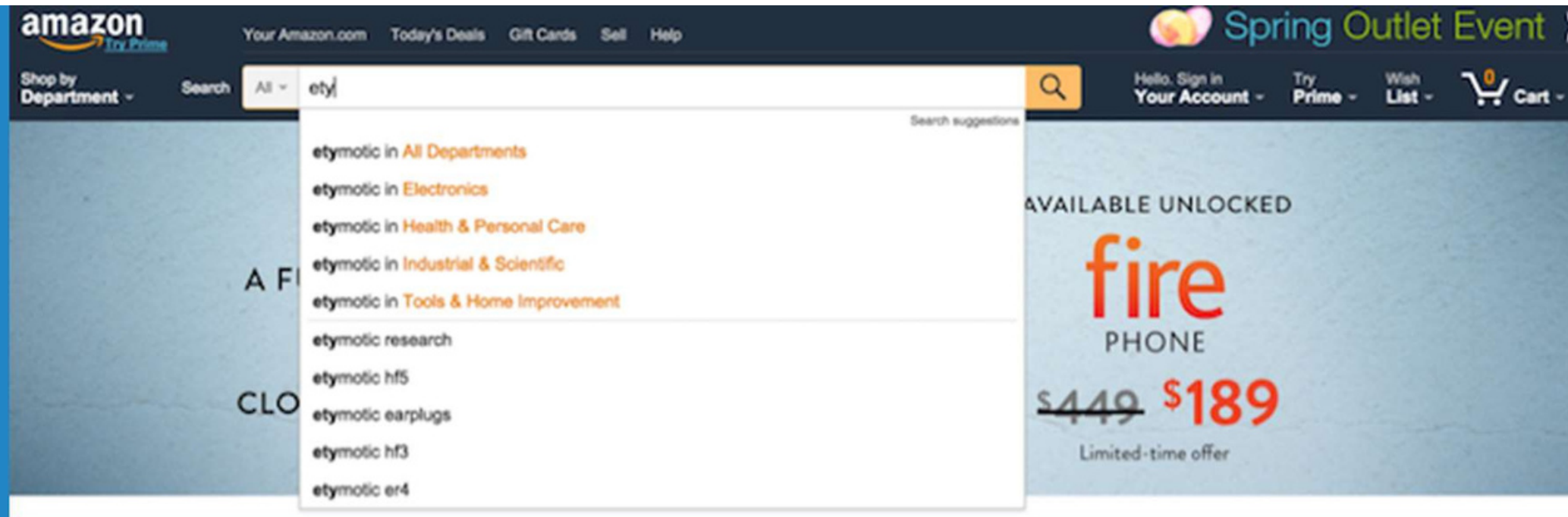https://owlsports.com/

Heuristic evaluation	Café test
•Team member 1: Apply first five heuristic evaluation items •Team member 2: Apply second five heuristic evaluation items	•Team member 1 –task: Join the owl club •Team member 2 –task: Purchase a ticket to a future b-ball game

Slips vs. Mistakes

Rules > Action

Memory

Knowledge

Capture

Mode

Description

Memory
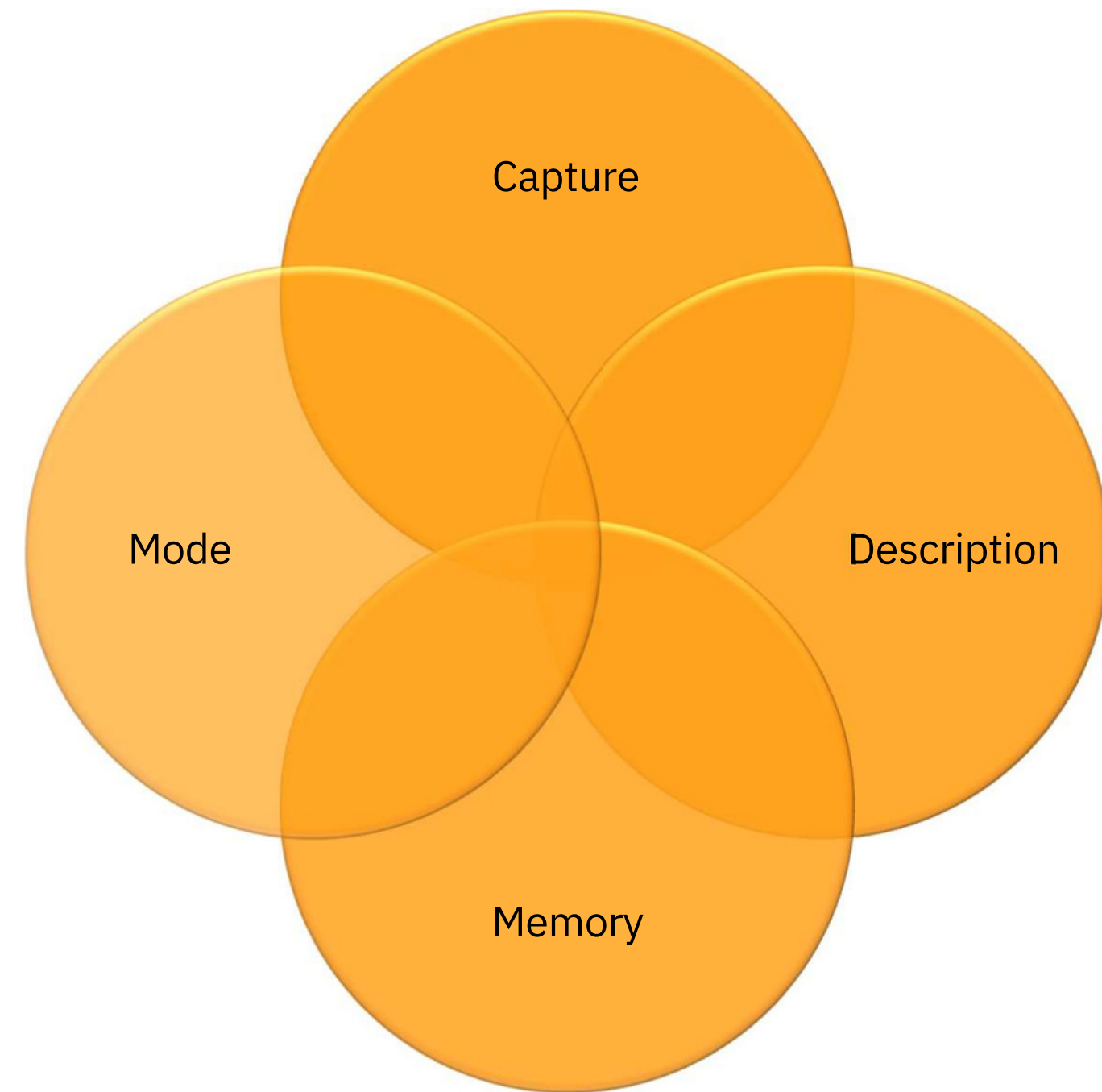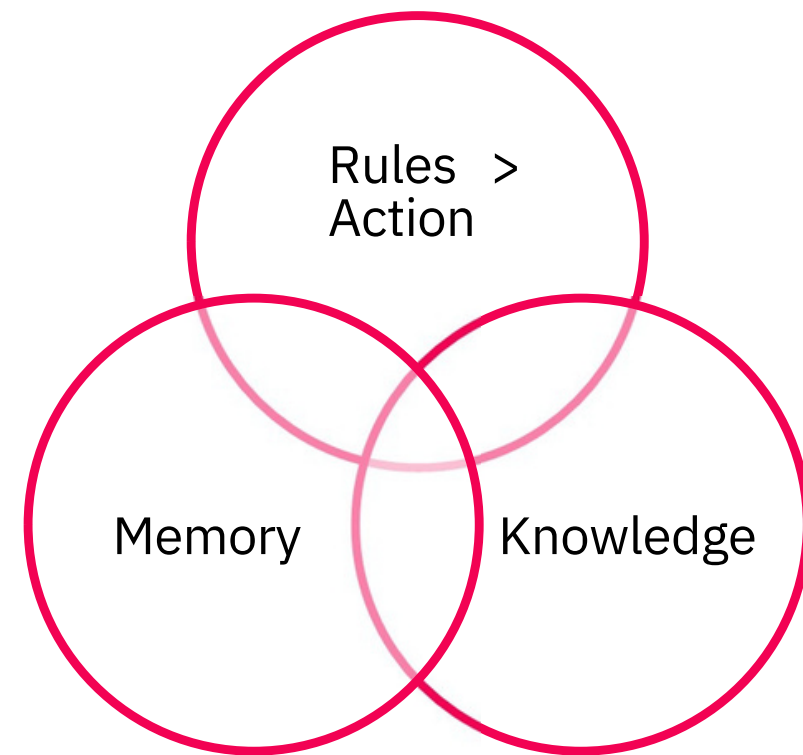
Classes of Errors

In-class Activity –Slips & Mistakes

Source: https://www.nngroup.com/articles/slips/

Breakout

Go back to selected site

Identify the 3 most important issues
using Norman's terms
One person reports back to the class